SOLUTIONS
to
EXERCISE 1

Recognition of Requirements

Detail or Performance Requirements?

1. Materials that are not nutrients for fungi shall be used. — PRF

2. Filter elements shall be constructed of materials that will not adversely affect or be affected by hydraulic fluid conforming to MIL-H-5606 or MIL-H-6083. — PRF

3. Toggle switches shall be used. — Detail

4. A means to prevent short circuits shall be provided. A means to prevent inadvertent activation of the light shall also be provided. — PRF

Detail or Performance Requirements

5. Gauges shall withstand a temperature of 145 degrees F ambient without damage.	PRF
6. The component pins shall be aligned as shown on Drawing 93333602.	PRF (more info would help)
7. External leads shall be acid tin electroplated or solder dipped in accordance with MIL-M-38510. If acid tin electroplated, the minimum plating shall be 150 micro-inches.	Detail
8. The device shall be manufactured in a careful, workman-like manner in accordance with good engineering practice.	Should not be used

Detail or Performance Requirements?

9. Electrical Rating: — PRF
   - Primary power level: 2W at 1 khz.
   - Working voltage (peak): 125 volts.

10. Material: Metal encased steel. — Detail

11. Weight: 4 ounces, maximum. — PRF

12. Duty cycle: Continuous. — PRF

13. Terminal strength: 5 pounds using method 211 of MIL-STD-202, test condition A. — PRF (need waiver)

14. Primary DC resistance: 157 ohms. — PRF

Detail or Performance Requirements?

15. The cloth shall be singed, mercerized, and fire retardent treated. — Detail

16. The size of the flashlight shall not exceed 5 cubic inches. The maximum dimensions shall be: width - 1.5 inches; length - 6.5 inches; depth - 1.5 inches. — PRF

17. The color of the Navy SEAL wet suit shall be black. — Detail

18. The color of the training wet suit shall be black. — Detail

19. The biocular eyepiece shall operate at altitudes up to 10,000 feet above sea level. — PRF

20. The shoes shall be of the following standard men's sizes: 9, 9-1/2, 10, 10-1/2, 11, 11-1/2, 12, 12-1/2, 13 — PRF

Detail or Performance Requirements?

21. The tank shall be capable of traversing the Aberdeen Proving Ground Terrain Profile Course at all speeds up to 30 MPH. PRF

22. The gross vehicle weight, including crew members, full complement of main gun ammunition (55 rounds), and fuel sufficient to meet the 275 mile minimum range, shall be no more than 18,780 pounds. PRF

23. Fluid seals and bearings shall provide a minimum of 5 years use without replacement. PRF

24. The filter housing shall have an automatic shutoff device to prevent drainage from the flow between the inlet and outlet port of the filter head when the filter bowl and element are removed. PRF

25. The vehicle shall accelerate on a dry level surface in the forward direction from zero to 20 MPH in 7 seconds and in the reverse direction in 9 seconds. PRF

Detail or Performance Requirements?

26. The reinforcement shall consist of corrosion-resistant steel wires. Hose under 16Z shall have a single layer of braid, and hose 16Z and above shall have 2 layers of braid. The wires shall be arranged over the inner tube to provide sufficient strength to ensure conformance with the requirements specified herein. — Detail

27. The hose shall not leak when filled with oil and subjected to the pressures and temperatures for the time periods specified in 4.6.9. — PRF

28. The equipment shall withstand, without damage, temperatures ranging from -45° to +71°C. — PRF

Detail or Performance Requirements?

29. The cloth shall be made from cotton that has been carded and spun into single yarn for both the wrap and filling. The weave shall be a 5-harness sateen. The filling effect side shall be finished and identified as the “face” side. Detail

30. The machine gun shall be compatible with and shall function properly when used in conjunction with the following equipment. PRF

Mounts	Ammunition
M122 tripod with M60 platform adapter	M60 armor piercing ammunition
M122 tripod with M60 pintle assembly	M80 ball ammunition
M122 traverse and elevating mechanism	M62 tracer ammunition
MK64 mount with M60 adapter	M63 dummy ammunition
	M82 blank ammunition

Detail or Performance Requirements?

31. The board shall consist of a backing conforming to type II unfaced board, laminated with fibrous glass cloth impregnated with a suitable resin secured with cement. (Fibrous Class Thermal Insulation Board) — Detail

32. The vapor-barrier coating shall protect chilled water lines from thermal loss and water drippage. (Vapor-barrier coating for insulated chilled water lines) — PRF

33. All canopy transparencies shall be constructed of glass or approved nonflammable transparent plastic. Acrylic plastics employed in pressurized cockpits and cabins shall be of hot-stretched material for maximum toughness. (General Spec for Aircraft Cockpit Canopies) — Detail

34. The distance from the dial to the innermost glass surface of the coverglass shall not exceed 0.250 inch. (Altimeter-Encoder AAU-32/A) — Detail

Detail or Performance Requirements?

35. The IRTIS shall be one-man portable and easily harnessed to the body. The harnessed equipment shall permit freedom of movement through a raised circular opening with a diameter of 25 inches and a depth of 20 inches. (Infrared Thermal Imaging System)

PRF

36. Types III and IV valves shall be designed to be installed between flanges as depicted in Drawing 810-1385892. (Shipboard Service Wafer and Lug Style Butterfly Valves)

PRF

37. The guided missile actuator shall operate without mechanical or electrical damage in a high temperature environment up to +71° C, as defined in MIL-STD-810, Method 501. (Guided Missile Miniature Piston Actuator)

PRF
(need waiver)

Detail or Performance Requirements?

38. The headpad shall be color 36231 of FED-STD-595 (gray) as shown in figure 8. An accepted alternative headpad shall be color black as shown in figure 10. (Aural Protector, Sound)

Detail

39. When red illumination is specified, the primary indicator shall have white letters, numerals and graduations on a black background and shall contain internal red illuminations. (Liquid Level Indicating Equipment)

Detail

40. The unit load required to compress the board to 40% of its original thickness shall average not less than 250 pounds per square foot (lb/in^2). Upon completion of the test, the board, after a 5-minute interval, shall return to within 90% of its original thickness. (Fibrous Glass Thermal Insulation Board.)

Really a test that should be in Sec 4 - Verification

SOLUTIONS
to
EXERCISE 2

Rewrite of Requirements

Rewrite as Performance Requirement

1. Detail Requirement:

   "The antenna shall be provided with a lightning arrester designed in accordance with MIL-A-9094."

   Performance Requirement Rewrite:

   "Lightning protection shall be incorporated in the antenna."

2. Detail Requirement:

   "Each extinguisher shall be provided with a metal clip or bracket to hold the discharge horn when not in use."

   Performance Requirement Rewrite:

   "Each extinguisher shall be provided with a means of holding the discharge horn when not in use."

Rewrite as Performance Requirement

3. Detail Requirement:

   “Plastic materials used in the fabrication of any parts shall meet the resistance to rain erosion requirements of MIL-R-7094 or all plastic parts shall be protected with an erosion resistant material so that the combination meets the requirements of MIL-R-7094 and MIL-P-8013.”

   Performance Requirement Rewrite:

   “Rain and moisture shall not penetrate any plastic materials.”

4. Detail Requirement:

   “Gaskets shall be fabricated from material conforming to ASTM D2000, grades 3AA510B13C12F17 or 3AA710B13C12F17.”

   Performance Requirement Rewrite:

   Requirement cannot be written in performance terms. More information would be needed.

Rewrite as Performance Requirement

5. Detail Requirement:

   "The contractor shall furnish sufficient mounted screws for installing the inclinometer. They shall be No. 6-32 round head, brass machine screws, one inch long, durable black finish and shall be fitted with lock washers and brass nuts. (Aircraft Inclinometer)."

   Performance Requirement Rewrite:

   "The inclinometer shall be securely installed and also be easily removed."

6. Detail Requirement:

   "The cover glass shall not interfere with the readability of the instrument. All reflecting glass surfaces shall be provided with a reflection-reducing coating that meets the requirements of MIL-C-14805. (Altimeter-Encoder)."

   Performance Requirement Rewrite:

   "The instrument cover shall not interfere with readability. All surfaces shall be non-reflecting."

EXERCISE 2 SOLUTIONS

1. “Lightning protection shall be incorporated in the antenna.”

2. “Each extinguisher shall be provided with a means of holding the discharge horn when not in use.”

3. “Rain and moisture shall not penetrate any plastic materials.”

4. Requirement cannot be written in performance terms. More information would be needed.

5. “The inclinometer shall be securely installed and also be easily removed.”

6. “The instrument cover shall not interfere with readability. All surfaces shall be non-reflecting.”